MIRA
Models, In situ, and Remote sensing of Aerosols

A community of collaboration, consistency, and openness

Quasi-quarterly Newsletter Number 5
Greg Schuster
June 12, 2023
Archives available *here*

Welcome

MIRA is an unfunded working group open to all interested aerosol scientists. The group seeks to advance knowledge of observations and model results through the encouragement of collaborations. Details can be found on the MIRA webpage at https://science.larc.nasa.gov/mira-wg/ and in this *powerpoint talk* presented by Chip Trepte at AGU in 2022. Links to the current MIRA topics can be found here:

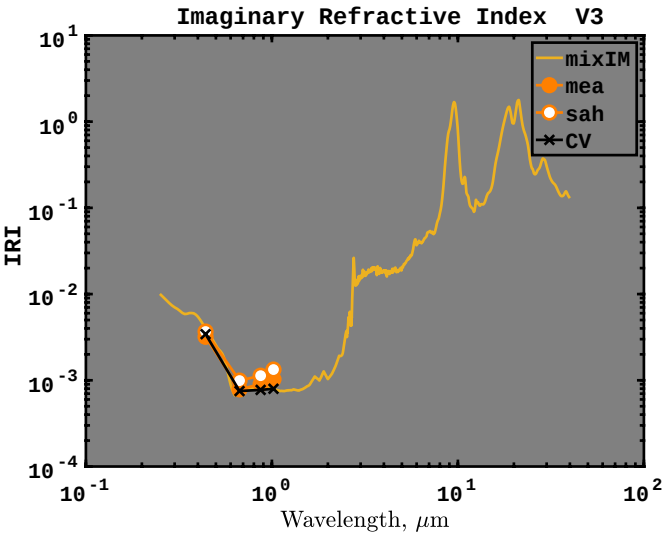
- *Satellite-Assisted Particulate Matter (SAPM)*
- *Mapping Aerosol Lidar Ratios for CALIPSO (MAC)*
- *Tables of Aerosol Optics (TAO)*
- *Harmonization of aerosol Assimilation Models and Retrievals (HAMR)*

Table of Aerosol Optics (TAO) update

We've interpolated the refractive indices for eight minerals to 1-nm resolution and added them to the TAO database (hematite, goethite, illite, kaolinite, Wyoming montmorillonite, Mississippi montmorillonite, calcite, and quartz). We were particularly interested in finding refractive indices for minerals in the 1–2.5 μm range for remote sensing purposes. We also computed refractive indices for mixtures of these minerals (using the Maxwell Garnett effective medium approximation) that are consistent with some of the AERONET climatologies. Contact mira_crew@lists.nasa.gov for access or to obtain a copy.

TAO seeks a postdoc

We have advertised a NASA Postdoctoral Program (NPP) position at www.zintellect.com. See the description of the position at the end of this newsletter and contact gregory.l.schuster@nasa.gov to discuss. Deadline for this round of proposals is July 1, 2023.



Morphing MIRA Webinar Series

Recent Webinars

We had two *Morphing MIRA* webinars that included three presentations in recent months.

i. March 27, 2023: Jason Tackett presented
- *A brief appreciation of the lidar ratio*

ii. March 27, 2023: Travis Toth presented
- *Mapping aerosol lidar ratios over ocean for CALIPSO using MODIS AOD-constrained retrievals and a global aerosol model*

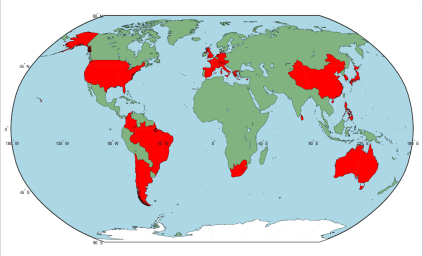
iii. May 8, 2023: Elisabeth Andrews presented
- *A way too quick overview of long-term, surface, in-situ aerosol optical property network measurements*

Presentations and recordings are posted at https://science-data.larc.nasa.gov/MIRA-WG/Morphing-MIRA-Webinar-Series/

Upcoming Webinar

The time for the next MIRA webinar will be at 2 GMT, and the date will be Monday, July 10 in the Americas. It is a little tricky, though, because that means that it will be July 11 for timezones located between GMT-2 and the international date line. Thus, it will be Tuesday, July 11 for Europe, Africa, Asia, Indonesia, Australia, and New Zealand, but it will still be July 10 for Hawaii and the Americas. I am hopeful that the Microsoft Teams invite will handle this properly when the time comes.

Our next speaker will be Ms. Soojin Park, Seoul National University, Korea.



MIRA Email List

We encourage subscribers to use the MIRA list server to post newsworthy items of interest to the community, such as aerosol conferences, sessions, webinars, relevant public databases and code that are not already listed on the MIRA website. The list is moderated in the background, so direct messaging to mira@espo.nasa.gov is encouraged (no need to request forwardings).

The MIRA email distribution list reaches 221 members in 22 countries, but we are working to expand even further. Please forward this newsletter to colleagues and encourage them to subscribe to MIRA at https://espo.nasa.gov/lists/listinfo/mira.

Upcoming Meetings in 2023

We have listed some meetings of relevance to MIRA in the table below, with updates for AGU and the addition of CADUC-2.

American Geophysical Union (AGU) Fall meeting

AGU has accepted the MIRA session proposal and abstract submissions are now open:
A096 - Models, In situ, and Remote sensing of Aerosols (MIRA)

We've rotated some of the conveners this year in an attempt to create an ever-evolving dynamic (Conveners are Greg Schuster, Carlos Pérez García-Pando, Paola Formenti, and Jens Redemann.). Last year we received 36 abstracts and we hope to continue the success this year! Please consider submitting your abstract to A096.

2nd Central Asian DUst Conference (CADUC-2)

Ali Omar pointed us to this highly relevant conference – see details in the table below. Send us your conference ideas and we will help advertise!

Asia Oceania Geosciences Society (AOGS)
There will be a MIRA session at the annual *Asia Ocean Geosciences Society meeting* in Singapore this Summer (Jul 30 to Aug 4). Our goal for this meeting is to strengthen connections with scientists in that part of the world and to provide opportunities to make new connections. So please forward this newsletter to your colleagues, especially those located in regions favorable for travel to Singapore. Look for session AS39 — the abstract deadline for AOGS is Feb 14, 2023.

Opinions in this newsletter are the personal views of the author and do not represent official NASA policy.

Anyone can subscribe to the MIRA email list server at	https://espo.nasa.gov/lists/listinfo/mira
The archive of all email messages is available at	https://espo.nasa.gov/pipermail/mira/
Post to news by sending email to	mira@espo.nasa.gov
MIRA Homepage:	https://science.larc.nasa.gov/mira-wg/
Archived newsletters:	https://science.larc.nasa.gov/mira-wg/info/
Contact the MIRA Steering Committee at	mira_crew@lists.nasa.gov

Conferences (hyperlinked)	Location	Date	Submit Date	MIRA people
ICNAA (Nucleation)	Brisbane, Australia	Jun 26-30	–	
IGARRS	Pasadena, CA, US	Jul 16-21	–	
International Conference on Carbonaceous Particles in the Atmosphere (ICCPA)	Berkeley, CA, US	Jul 9-12	–	
Asia Oceania Geosci. Soc. (AOGS)	Singapore	Jul 30-Aug 4	–	**MIRA Session**
European Aer. Sci. Conf (EAC)	Malaga, Spain	Sep 2-8	–	
EUMETSAT	Malmö, Sweden	Sep 11-15	–	Dubovik, Trepte
Aerocom/AeroSat 2023	Richland, WA, US	Oct 15-20	Aug 15	Chin
Amer. Assoc. Aer Res (AAAR)	Portland, OR, US	Oct 2-6	–	
AGU	San Francisco, CA, US	Dec 11–15	Aug 2	**MIRA Session**
2^{nd} Central Asian DUst Conference (CADUC-2)	Nukus, Uzbekistan	Apr 14-21	Oct 1	

MIRA Steering Committee

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See TAO Postdoc Solicitation at www.zintellect.com

Linking Aerosol Measurements to Modeling Efforts

Proposal deadline for this round is July 1, 2023.

Contact gregory.l.schuster@nasa.gov
NASA Langley Research Center
Hampton, Virginia

This research opportunity focuses on linking aerosol measurements to modeling efforts. The Models, In situ, and Remote sensing of Aerosols (MIRA) is an international working group of 200+ members in 22 countries that brings worldwide expertise from all of these elements together and facilitates collaborative work within the atmospheric aerosol specialty. One NASA project within the MIRA working group is the Table of Aerosol Optics (TAO). TAO is a new community effort that links all of the aerosol specialties together by applying single-scatter computations to representative measurements for climate model and remote sensing applications. TAO updates the aerosol tables in Shettle and Fenn (1979) and Hess et al. (1998) with computations that are based upon recent measurements, and TAO will use an open data repository to allow community contributions and the dynamic evolution of contents. The TAO team at NASA Langley Research Center is seeking post-doctoral candidates interested in science research topics that leverage MIRA and TAO efforts and advance the linking of aerosol measurements and modeling capabilities.

References

Hess, M., P. Koepke, and I. Schult (1998), Optical Properties of Aerosols and Clouds: The Software Package OPAC, Bull. Am. Meteorol. Soc., 79 (5), 83144.

Shettle, E., and R. Fenn (1979), Models for the aerosols of the lower atmosphere and the effects of humidity on their optical properties, Tech. Rep. AFGL-TR-790214, Air Force Geophysics Laboratory.